
APPENDIX I

Natural Communities of the Black River State Forest / Meadow Valley Landscape

Abbreviations Used

TNC = The Nature Conservancy

NVC = National Vegetation Classification, developed by The Nature Conservancy's national, regional, and state ecologists. Each type has a unique 4-digit code.

HT = Habitat Type, as developed for Wisconsin by Kotar and Burger (1996)

For interpretation of "G" (global) and "S" (state) ranks, see Appendix M.

Note that there is not necessarily a one-to-one correspondence between Heritage Program types (many of which are still based on Curtis 1959), TNC NVC types, and habitat types. These systems are based on different underlying concepts and were developed for different purposes. Any "crosswalks" between them will be imperfect.

Forest Communities

◆ Central Sands Pine-Oak Forest (white pine-red pine-white oak-red oak)

Large patch, limited distribution. S3

This type is associated strongly with subsection 222Ka (and 222Kk), where it occurs on very dry to dry-mesic sites on low nutrient sands. Sandstone bedrock may be very close to the surface. Two types should probably be recognized: a very dry type, with jack pine and northern pin or black oak important canopy species, especially where bedrock is at or near the surface; and a dry to dry-mesic type with red oak, red maple, white pine, and red pine more prevalent. Both types are floristically depauperate, but the moister type supports more mesophytic herbs, shrubs, and trees.

TNC NVC Type: 2481 White Pine – White Oak Forest G3

Habitat Types: PVGy, PVCr, PVHa

◆ Northern Dry-mesic Forest (white pine-red pine)

Large patch, wide distribution. S3

Dominant trees are typically white and red pines. Canopy associates may include red maple, red oak, bigtooth aspen, paper birch, and, in stands farther north, balsam fir. Understory plants usually include blueberries, wintergreen, bracken fern, pipsissewa, and Canada mayflower. On the BRSF, the best developed stands are associated with sandstone bedrock outcrops.

TNC NVC Types: 2480 White Pine – Red Oak Forest G3

2444 White Pine / Blueberry Dry-mesic Forest G3G4

2378 White Pine (Red Pine) Driftless Bluff Forest G3

Habitat Type:

◆ Northern Dry Forest (jack pine-northern pin oak)

Large patch, wide distribution. S3

In Central Wisconsin this type should perhaps be represented by very dry stands of the Central Sands Pine-Oak Forest. For now, we've typed some of the stands on the excessively drained, level to gently rolling, low nutrient sands that cover much of the Black River State Forest as "Northern Dry Forest". Very few high quality occurrences were documented, as this type was greatly affected in central, west-central, and northwestern Wisconsin by a recent jack pine budworm outbreak. In the past, and in some locales presently, this type has often been converted to plantation monocultures of red pine or sometimes jack pine.

TNC NVC Type: 2478 Jack Pine – Northern Pin Oak Forest G4G5

Habitat Types: PVGy

◆ **Southern Dry-mesic Forest (red oak-white oak-red maple)**

Large patch, wide distribution.

Documented at only a few sites on the BRSF, this forest type is more frequent in the ridge and coulee portions of the Driftless Area just to the west. Level to gently sloping sandy terraces within the floodplain of the Black River but above normally flood-prone areas, and saddles or north and east slopes associated with sandstone ridges, contained stands that could be typed here. A trend toward replacement of oaks by red maple, black cherry, or basswood is evident in some stands.

TNC NVC Type: 2068 Midwestern White Oak – Red Oak Forest G4?

Habitat Types: ArDeV

◆ **Southern Mesic Forest (mesic floodplain subtype: sugar maple-basswood)**

Large patch, wide distribution. S2

Rare on the State Forest and in subsection 222Ka, with stands documented only on terraces just above the floodplain of the Black River. This community has not been found on other state forests in Wisconsin. The herbaceous flora is exceptionally rich, and on the BRSF this type provides habitat for rare forest interior songbirds and forest raptors, especially where bordered by extensive stands of other forest types.

TNC NVC Type: 2062 North-central Maple – Basswood Forest G4?

Habitat Type: ATiCa

◆ **Hemlock Relict (eastern hemlock)**

Small patch, limited distribution. S2

Extremely rare on the Black River State Forest, with a single stand documented. This represents the only Jackson county location for hemlock, and is probably the only occurrence of the type on state forest lands. Important southwestern Wisconsin sites for this community occur are within the Kickapoo, Baraboo, and Pine River drainages, and in the Baraboo Hills. Most of the stands are in Sauk or Vernon counties, though a few are known from southern Monroe, southwestern Juneau, Iowa, and southern Richland counties. Hemlock is absent from similar sites in the Driftless portions of southeastern Minnesota, northeastern Iowa, and northwestern Illinois.

TNC NVC Type: 2597 Hemlock – Sugar Maple Relict Forest G2

Habitat Types:

◆ **White Pine – Red Maple Swamp (white pine-red maple)**

Large patch, limited distribution. S2

This wetland community is virtually restricted to subsection 222Ka, which encompasses Glacial Lake Wisconsin and associated geological features. The State Forest contains some of the most significant stands of this geographically restricted type. Rare plants, including several species markedly disjunct from their more eastern ranges, and springs or seepages are almost invariably associated with this community. Mature stands with high canopy cover may support rare animals, and are frequently rich in northern species at their southern range limits.

TNC NVC Type: 2482 White Pine – Red Maple Swamp G3G4

Habitat Types: PVRh

◆ **Floodplain Forest (silver maple-green ash)**

Large patch or linear, wide distribution. S3

Associated with the floodplains of major rivers in southern Wisconsin but with outliers in the north, this community is represented by several occurrences along the Black River. This type supports a number of habitat specialists, including some that are rare such as the Prothonotary Warbler and Red-shouldered Hawk. The Floodplain Forest community is rare on state forest lands.

TNC NVC Type: 2586 Silver Maple – Elm (Cottonwood) Forest G4?

Habitat Types: NA

◆ **Southern Hardwood Swamp (ash spp.-red maple-American elm)**

Large patch, widespread distribution. S2

Wet deciduous forests not associated with major river floodplains are not well represented on the BRSF. This is a minor type in 222Ka, and is much better represented on glaciated terrain farther north.

TNC NVC Type: 2071 Red Maple – Ash – Birch Swamp Forest G4

Habitat Types: NA

◆ **Tamarack Swamp/Central Tamarack Poor Swamp**

Large patch, limited distribution. S3

In Wisconsin, most occurrences of this “southern” conifer swamp community are in section 222K. Several important stands were documented on the State Forest. This type provides important habitat for many northern birds at or near their southern range limits in central Wisconsin.

TNC NVC Type: 2472 Central Tamarack Poor Swamp G4?

Habitat Types: NA

◆ **Black Spruce Swamp**

Large patch, wide distribution. S3?

Widespread in northern Wisconsin, this acidic wet forest community is relatively restricted in the southern part of the state to Glacial Lake Wisconsin and a few other locations. The larger stands often support northern species at their southern range limits.

TNC NVC Type: 2454 Black Spruce/Labrador Tea Poor Swamp G5

Habitat Type: NA

◆ **Jack Pine Swamp**

Small patch, limited distribution. S2

Acidic, forested peatlands with jack pine as an important canopy component are uncommon in Wisconsin. Stands have been documented in Bayfield and Vilas counties, as well as on the BRSF in Jackson county. Sphagnum mosses, sedges, and ericaceous shrubs are important groundlayer components.

TNC NVC Type: 166 Jack Pine Swamp G?Q

Habitat Type: NA

◆ **Forested Seep**

Small patch, wide distribution.

On the Black River SF this type is typically associated with exposures of Cambrian sandstone bedrock that form cliffs along steep-walled river gorges. The best documented examples occur on the flanks of the Black River’s main channel, and along the lower reaches of Morrison and Halls Creeks. Groundwater seepage keeps the cliffs and the narrow benches below them constantly moist. A mixed canopy of coniferous and deciduous trees shades the sites. Important tree species include red maple, black ash, yellow birch and white pine. Understory diversity can be very high. Several rare plants and invertebrates have been documented primarily in this community.

TNC NVC Type: 2071 Red Maple – Ash – Birch Swamp Forest G4 (seepage swamp subtype is not yet ranked)

Habitat Type: NA

Savanna Communities

◆ **Pine Barrens (jack pine-northern pin oak-prairie grasses and forbs-sweet fern)**

Large patch, limited distribution. S2

The fire-dependent “barrens” community is not currently well represented on the State Forest. Fire suppression and conversion to plantations have left few intact remnants. Numerous sensitive plant and animal species are associated with or dependent on this rare community, which is an appropriate target for restoration and maintenance at small to very extensive scales in subsection 222Ka. Sharp-tailed grouse, dwarf milkweed, Karner blue butterfly, frosted elfin, phlox moth, blue racer, and bull snake are just a few of the numerous sensitive species that can benefit from barrens maintenance.

TNC NVC Type: 2490 Jack Pine / Prairie Forbs Barrens G2

Habitat Type: NA

Shrub Communities

◆ Alder Thicket

Linear, widespread distribution. S4

Found along stream margins and wetland edges. Common in the north, more localized in the central sands, and generally rare in southern Wisconsin.

TNC NVC Type: 2381 Alder Swamp G5?

Habitat Type: NA

Herbaceous Communities

◆ Emergent Aquatic (cattail-bulrush-burreed)

Large patch or linear, widespread distribution. S4

Emergent marshes are not well developed on the BRSF, at least partly because of the acidic, low nutrient surface waters characteristic of ecoregion 222Ka, and the absence of lakes. Documented stands are associated with artificial impoundments or sluggish backwaters of streams.

TNC NVC Type: 2026 Bulrush – Cattail – Burreed Shallow Marsh G4G5

2229 Midwest Mixed Emergent Deep Marsh G5

Habitat Type: NA

◆ Submergent Aquatic (pondweed-coontail-water milfoil)

Large patch or linear, wide distribution. S4

As with the emergent marsh, this aquatic macrophyte community is also poorly developed in the Central Sands. The major exceptions are stands associated with artificial impoundments. Among the aquatic plants adapted to the acidic, nutrient-poor waters typical of subsection 222Ka are several rare species.

TNC NVC Type:

Habitat Type:

◆ Coastal Plain Marsh

Small patch, limited distribution. S1

No natural stands of this rare wetland type were documented on the State Forest, but a significant occurrence was found on adjoining Jackson County Forest land. The key attributes associated with this feature, a small pond with a sandy littoral zone that experiences marked natural water level fluctuations, can be partially mimicked by human disturbance. These include an exposed substrate of almost bare sand kept moist by slow groundwater seepage. A number of rare or otherwise restricted plants can colonize such habitats, which are sometimes created on the margins of borrow pits, in roadside ditches, and on the edges of moss drying beds. Many of these rare plants have ranges centered on the Atlantic Coastal Plain of the eastern U.S. (hence the community name). The conservation value of the artificial sites is currently undetermined.

TNC NVC Type: 5108 Inland Coastal Plain Marsh G2?

Habitat Type: NA

◆ Northern Sedge Meadow (sedges-Canada bluejoint grass)

Large patch, widespread distribution. S3

The classification of wet open meadows in central Wisconsin remains problematic. For the time being, “Northern Sedge Meadow” will be used to classify those herbaceous wetlands dominated by tussock sedge, the broad-leaved sedge *Carex utriculata*, and Canada bluejoint grass. Sphagnum mosses are absent or present in a thin, discontinuous layer.

TNC NVC Type: 2257 Northern Sedge Wet Meadow G4G5Q

Habitat Type: NA

◆ **Central Poor Fen**

Large patch, limited distribution. S3

These acid, floristically depauperate meadows are common features of the central Wisconsin landscape, particularly in subsection 222Ka. A layer of sphagnum mosses is typically present, with Canada bluejoint grass and the sedges *Carex oligosperma* and *C. utriculata* the dominant graminoids. Hardhack (*Spiraea tomentosa*) is frequently common. Ericaceous shrubs are conspicuous by their absence, though leatherleaf and cranberries are usually present with low cover. More work on floristics, water chemistry, and hydrology is needed to better classify these communities.

The State Forest has extensive acreages of this type, but many of the larger stands have been affected by hydrologic modification and/or the harvest of sphagnum moss.

TNC NVC Type: 2265 Northern Poor Fen G3G4

Habitat Type: NA

◆ **Sand Barrens**

Small patch, wide distribution.

This type references pine or oak barrens formerly affected by disturbances other than fire, such as grading, furrowing/scarification, or even cultivation. Significant exposures of bare sand are characteristic, and the re-vegetation of these droughty, low-nutrient sites is typically very slow. The conservation significance of the sand barrens community lies in its ability to provide habitat for specialized plants and animals, some of them now rare.

TNC NVC Type: 2318 Midwest Dry Sand Prairie G2G3

5099 Sand Barrens

Habitat Type: NA

Primary Communities

◆ **Dry Cliff**

Linear patch, widespread but very localized distribution. S4

Dry Cambrian sandstone cliffs are characteristic features of 222Ka, where they most often occur on the sides of the many bedrock mesas, mounds, and pinnacles that emerge abruptly from the central sands landscape. Several rare plants are associated with dry acid cliff habitats in and around the State Forest. Sandstone cliffs also occur along the Black River and some of its tributaries, such as Halls, Morrison and Perry Creeks. It's likely that future versions of this classification will split communities along bedrock type. If that happens, this type would be restricted to the Driftless Area of southwestern and central Wisconsin, and a few locations along Lake Superior in Bayfield and Ashland counties.

TNC NVC Type: 2045 Midwest Sandstone Dry Cliff G?Q

Habitat Type: NA

◆ **Moist Cliff**

Linear, widespread. Less common than the dry cliff community. S4

Rare on the BRSF, but highly significant occurrences were documented on Cambrian sandstone along the Black River and its tributaries, Morrison, Halls, and Perry Creeks.

TNC NVC Type: 2287 Sandstone Moist Cliff G4G5

Habitat Type: NA

Aquatic Types

Definitions and descriptions of aquatic types will be forthcoming over the next several years.